

EXHIBIT 6



Docket No.: 28212/1200285-US1/NC34963US
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Yin L. Liong, et al.

Application No.: 10/719,371

Confirmation No.: 3587

Filed: November 21, 2003

Art Unit: 2141

For: USING POLICY-BASED MANAGEMENT TO
SUPPORT DIFFSERV OVER MPLS
NETWORK

Examiner: Kristie D. Shingles

AMENDMENT IN RESPONSE TO NON-FINAL OFFICE ACTION

MS Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

INTRODUCTORY COMMENTS

In response to the Office Action dated February 9, 2005, please amend the
above-identified U.S. patent application as follows:

Amendments to the Specification begin on page 2 of this paper.

Listing of the Claims begins on page 3 of this paper.

Remarks/Arguments begin on page 9 of this paper.

LISTING OF THE CLAIMS

1. (Original) A system for configuring differentiated services (Diffserv) over multi-protocol label switching (MPLS) in a network that includes MPLS tunnels, comprising:
a policy server that is arranged to configure a customer policy and a mapping policy that maps between an experimental (EXP) field and a unique per-hop-behavior (PHB), and to deploy the mapping policy and the customer policy to interfaces of devices of the network that correspond to the tunnels.
2. (Original) The system of claim 1, wherein
the customer policy comprises a tunnel group identifier and tunneling mode.
3. (Original) The system of claim 1, wherein
the policy server translates the mapping policy into device specific commands,
and
deployment is performed by deploying commands to specific devices.
4. (Original) The system of claim 1, wherein
deployment is such that the interfaces associate with at least one of input roles, output roles and MPLS gateways of customer source and destination host groups.
5. (Original) An apparatus for configuring Diffserv over MPLS in a network, comprising:
a memory;
a service application residing on the memory,

wherein the service application is arranged to configure a customer policy that comprises a tunnel group and tunneling mode, the customer policy being arranged to have customer traffic mapped into MPLS tunnels, and

wherein the service application is arranged to configure an EXP-to-PHB mapping policy that is arranged to map EXP fields to PHB;

a central processing facility that is arranged to translate the customer policy and mapping policy into device-neutral policy parameters; and

a policy consumer that is arranged to translate the device-neutral policy parameters into device-specific commands, and that is further arranged to deploy the device-specific commands to policy targets, such that the customer policy and mapping policy are implemented across at least a portion of the network.

6. (Original) The apparatus of claim 5, further comprising:

a user interface that is arranged to receive the customer policy and the mapping policy.

7. (Original) The apparatus of claim 5, wherein

deployment is such that the interfaces associate with at least one of input roles, output roles and MPLS gateways of customer source and destination host groups.

8. (Original) The apparatus of claim 5, wherein

the policy consumer is further arranged to attach the customer policy to the corresponding MPLS tunnels and deploy the customer policy to interfaces of the attached MPLS tunnels.

9. (Original) The apparatus of claim 5, further comprising:

a database for storing the device-neutral policy parameters.

10. (Original) The apparatus of claim 5, wherein

the service application comprises a tunnel group object that is arranged to create the MPLS tunnels by specifying end-point routers and inter-connecting topology.

11. (Original) An apparatus for configuring Diffserv over MPLS in a network, comprising:

a means for defining a mapping policy that maps between an EXP field and a unique PHB;

a means for maintaining a customer policy;

a means for translating the mapping policy and customer policy into device-specific commands; and

a means for deploying the device-specific commands to policy targets.

12. (Original) The apparatus of claim 11, wherein

the customer policy includes information about a tunnel group identifier and a tunnel mode.

13. (Original) The apparatus of claim 11, wherein

deployment is such that the interfaces associate with at least one of input roles, output roles and MPLS gateways of customer source and destination host groups.

14. (Original) An article comprising: a storage medium, the storage medium having instructions stored thereon, wherein when the instructions are executed by at least one device, they result in:

defining a mapping policy configured to map between an EXP field and a unique PHB;

defining a customer policy that is configured to govern the treatment of individual customer traffic;

defining a network policy that is configured to define the Diffserv treatment of aggregated traffic;

translating the mapping policy, the network policy and the customer policy into device-specific commands; and

deploying the device-specific commands to policy targets.

15. (Original) The article of claim 14, wherein executing the instructions further results in:

generating device neutral information associated with the mapping policy, the network policy and the customer policy.

16. (Original) The article of claim 15, wherein
the device specific commands are generated from the device neutral information.

17. (Original) The article of claim 15, wherein executing the instructions further results in:

storing the device neutral information in a database.

18. (Original) The article of claim 14, wherein
deployment is such that the interfaces associate with at least one of input roles, output roles and MPLS gateways of customer source and destination host groups.

19. (Original) The article of claim 14, wherein
deploying the mapping policy to the network interfaces further comprises issuing new commands to reconfigure a router based on the mapping policy.

20. (Original) The article of claim 14, wherein
the customer policy includes information about a tunnel group identifier and a tunnel mode.

26. (Original) The method of claim 21, wherein

deploying the mapping policy to the network interfaces further comprises issuing new commands to reconfigure a router based on the mapping policy.

27. (Original) The method of claim 21 wherein

the customer policy includes information about a tunnel group identifier and a tunnel mode.

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REMARKS

Claims 1-27 are now pending in this Application. The Non-Final Office Action dated February 9, 2005 has rejected Claims 1-27. Further, the drawings are objected to. None of the claims were allowed. Applicants have amended the specification to add a missing reference number. The claims are listed above, but none of the claims are amended. Applicants submit that the pending claims are patentable for the reasons discussed in detail below.

The objection to the drawings:

Section 3 of the Office Action objected to the drawings because Figure 3 includes a reference number 362 that is not mentioned in the description. Applicants have amended the specification to indicate that reference number refers to one or more communication links. Figure 3 clearly illustrates these communication links, so the amendment does not add new matter to the specification. Accordingly, applicants respectfully request that the objection to the drawings be withdrawn.

The 35 U.S.C. §102 rejection of Claims 1-4:

Section 5 of the Office Action rejected Claims 1-4 under 35 U.S.C. §102(e) as being anticipated by Gibson et al (U.S. Patent No. 6,680,943, hereinafter referred to as Gibson). Gibson is directed to establishing a bi-directional communication session between two end-points in a communications network, especially where it is required to provide a guaranteed quality of service for the connection. (See Gibson, col. 1, lines 8-12). Applicants respectfully disagree that Gibson discloses or suggests all of the elements of the rejected claims.

For example, with regard to independent Claims 1, 5, 11, 14, and 21, the Office Action does not indicate that Gibson discloses or suggests a customer policy and a mapping policy that maps between an experimental (EXP) field and a unique per-hop-behavior (PHB). Applicants' specification explains that "the experimental (EXP) field [is] in the MPLS shim header" (Spec., pg. 3, lines 23-24). Applicants' find no mention in Gibson of an experimental field, a shim header,

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or an MPLS header. Moreover, applicants' find no portion of Gibson that discloses or suggests an equivalent to the experimental field in any header.

Similarly, the Office Action does not identify in Gibson a customer policy (or equivalent), a mapping policy (or equivalent), or mapping between the experimental field and a unique PHB. Instead, the Office Action simply states that the administrative server implements “the appropriate policies.”

The Office Action further glosses over the specific limitations of the claims with a broad description of Gibson's process. However, Gibson's approach teaches away from the claimed invention. Gibson explains that additional components and messaging protocols are provided "to determine and *reserve* guaranteed quality of service for particular connections for particular paths over the network." (emphasis added, Gibson, col. 6, lines 55-57). The Office Action also indicates that a reservation of bandwidth is made along the most preferred path. Yet, applicants' claims do not include any such reservations.

Accordingly, the rejection of at least independent Claim 1 under 35 U.S.C. §102(e) should be withdrawn. Also, it is well established that dependent claims are considered to include all of the elements of the independent claims from which the dependent claims depend. Thus, dependent claims are patentable for at least the same reasons as their corresponding independent claims. Accordingly, the rejection of dependent Claims 2-4 should also be withdrawn.

Nevertheless, applicants note that Gibson does not disclose or suggest a tunnel group, a tunnel group identifier, or a tunneling mode as defined by applicants' specification for dependent Claims 2, 10, 12, 20, and 27. Page 4 of the Office Action indicates that Gibson registers tunnels in the management layer, where they are labeled for identification and used as label switch paths in the MPLS network. However, Gibson does not disclose or suggest that a group of tunnels is identified by a single identifier. Applicants' specification explains that a tunnel group "is a set of tunnels that share the same properties and form a certain topology . . ." (Spec, pg. 11, line 12). Gibson does not disclose or suggest any equivalent grouping, or a single identifier for any such grouping. Gibson

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discloses that “pre-provisioned label switch paths are referred to as ‘tunnels.’” (Gibson, col. 10, lines 64-65). Gibson also states that “information about the source, destination and capacity of each tunnel is made known to the management layer.” (Gibson, col. 11, lines 2-4). However, Gibson does not group these tunnels by shared properties or to form a certain topology.

Also, applicants' specification explains that "[t]unneling mode defines the method of translating the Diffserv information in the MPLS headers (labels and EXP field) into the DSCP value in the encapsulated IP header when packets exit the MPLS network." (Spec., pg. 4, lines 1-3). Gibson does not disclose or suggest any such tunneling mode.

Applicants' are not arguing the specification, but rather are showing that Gibson does not disclose or suggest terms of the claims as defined by the specification. Because Gibson does not disclose or suggest the tunneling limitations as defined by the specification, the rejection of at least dependent Claims 2, 10, 12, 20, and 27 under 35 U.S.C. §102(e) should be withdrawn.

The 35 U.S.C. §103 rejection of Claims 5-27:

Section 7 of the Office Action rejected Claims 5-27 under 35 U.S.C. §103(a) as being unpatentable over Gibson in view of Giniger et al (U.S. Patent No. 6,751,729, hereinafter referred to as Giniger). Giniger is directed to establishing and operating a virtual private network. (See Giniger, col. 1, lines 11-12). Applicants respectfully disagree that Gibson and Giniger disclose or suggests all of the elements of the rejected claims, and respectfully disagree that either reference provides a motivation for one of ordinary skill in the art to combine Gibson and Giniger.

Independent Claims 5, 11, 14, and 21 include the limitations of an EXP field, a customer policy, and a mapping policy that maps an EXP field to a PHB. As discussed above, Gibson does not disclose or suggest these limitations. Also, applicants find no indication that Giniger discloses or suggests these elements. Accordingly, independent Claims 5, 11, 14, and 21 are patentable for at least the same reasons as independent Claim 1. The Office Action admits that Gibson fails to explicitly teach a means for translating the mapping policy and customer policy into device-specific commands. Instead, the Office Action indicates that Giniger teaches implementing device-specific

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commands according to the “particular policy,” wherein the commands instruct the devices on the mapping policies. However, Giniger does not disclose or suggest translating, converting, or otherwise modifying a customer policy or a mapping policy, let alone a mapping policy that maps an EXP field and a PHB as required by the independent claims. Thus, Giniger does not disclose or suggest one of the limitations that the Office Action admits is missing from Gibson.

Further, Gibson does not disclose or suggest a virtual private network, or any encryption, such as that disclosed in Giniger. In addition, Giniger does not disclose or suggest differentiated services (Diffserv) or multi-protocol label switching (MPLS). Thus, there is no reason to believe that one of ordinary skill in the art would be motivated to select and combine Giniger with Gibson. Page 6 of the Office Action indicates that the motivation to combine the references is “because in order to effectively and successfully execute a policy, *it must be* translatable to the components of the system for the proper deployment.” (emphasis added). Even if, *arguendo*, some kind of translation must occur, there is no reason to select Giniger for combination with Gibson. Giniger does not disclose or suggest any translation, conversion, or other modification. Giniger simply discloses a server “used for configuring the node devices, including for sending commands to the node devices to establish secure communication tunnels with other node devices.” (Giniger, col. 4, lines 3-6). There is no translation disclosed or suggested, so there is no reason to single out Giniger for combination with Gibson.

Accordingly, the rejection of independent Claims 5, 11, 14, and 21 under 35 U.S.C. §103(a) should be withdrawn. Also, because dependent claims are considered to include all of the elements of the independent claims from which the dependent claims depend, dependent claims are patentable for at least the same reasons as their corresponding independent claims. Consequently, the rejection of dependent Claims 6-10, 12, 13, 15-20, and 22-27 should also be withdrawn.

In view of the above remarks and the amendment to the specification, applicants believe the pending application is in condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Dated: May 4, 2005

Respectfully submitted,

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